SAFAR – An Online Tour Management Portal

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

JANUARY 2024

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APPROVAL

This Project titled "**Safar - An Online Tour Management Portal**", submitted by Abdullah Al-Mamun to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 25-01-2024

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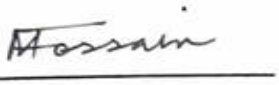

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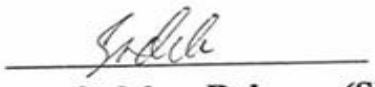

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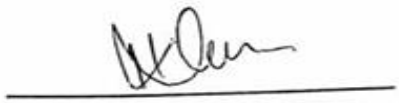

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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Dr. Touhid Bhuiyan, Head, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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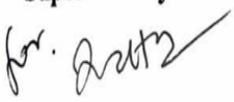

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ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project/internship successfully.

We really grateful and wish our profound our indebtedness to **Dr. Md Zahid Hasan**, **Associate Professor & Program Director MIS**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*Development*" to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to Dr. Md Zahid Hasan and Head**,** Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

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ABSTRACT

The project is like a tour management portal focused on local work based on our country. This project has been built for people with different choices, who love traveling, and those willing to provide different types of services to travelers.

Two types of users are stakeholders of this system: service Buyers and Service Providers. The service provider will create a representation of the service they want based on their choice. On the other hand, those who need service find their desired service and contact the service provider belonging to the service demo he/she (buyer) has selected and get the service by paying the service charge.

The project will reduce our tourists' uncomfortable issues, be a better medium to get desired services, and eliminate the hassle.

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CHAPTER 1

Introduction

1.1 Introduction:

This project was designed according to observation of what people want from tourist services. Selecting places, booking, purchasing tickets, and accessing local travel information. This portal is also designed to make it friendly for tourists and fulfill their customized demands, and a specific user can join as an organizer and tour guide. The author or any organizations may operate recommended tourists. This project has been designed thinking about better user experience. Our important user advantage is the Guide. Users can hire a guide for any tourist zone by visiting their profile, ranking, and reviews. That will help you to select a guide along the way. There will have been all of the processes of going to the tourist zone like the selection of place, transportation (car, plane), hotel booking, user guide, etc. You can choose anyone you want.

1.2 Motivation:

The problem of jobless people has gradually increased day by day in Bangladesh. It has a massive population with various skills. However, the initiative get down to convert the man-power to a workforce for an amount number of workplaces. Conversely, people need help finding suitable people to get the different services we need on our platform. So, this project can increase the fact. It will reduce our unemployment problem and make us strong survivor. This platform will provide many opportunities for the unemployed young generation.

1.3 Objective:

The project's objective is to represent a work, where our country’s people can lead a comfortable life with jobless matter & can hope for make their lives update. Moreover, it makes people's lives easier in general. Population transformation into manpower and enforce the wheel of our country's economy.

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1.4 Expected Outcome:

The future plan of our platform is a greater amount of services among tourists and a huge students also to get their desired aim. Expected outcomes inherit the requirements. The social outcome is that both kinds of consumers can be benefited from this system. The service consumer can find the service they expect and get problems solved. People, who want to serve, can earn money by providing their services to the tourists.

1.5 Report Layout:

Chapter 1: Discussed about introduction, motivation, objective, and expected Outcome of this application.

Chapter 2: Discussed about Terminology, related works and comparative analysis, Scope of the problems and challenges.

Chapter 3: Discussed about Business process modeling, requirement collection and analysis, use case modeling and description, logical data model.

Chapter 4: Discussed about frontend design, Backend design, interaction design, and user experience (UX).

Chapter 5: Discussed about implementation of Database, Frontend design implementation, Testing implementation and results.

Chapter 6: Discussed about impact on society, impact on economy, sustainability plan.

Chapter 7: Discussed about conclusion, future scope.

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CHAPTER 2

Background

2.1 Terminologies:

Before developing any application, we must have to maintain many important part. This is full of implementation of an application. That shows a flow of work to develop an application. Four important development parts_

- Planning
- Analysis
- Design
- Implementation

First of all, must need to know what I want to make by many unique services or features. And then, need to be ready for fulfill the plan and work hard for this platform. And then research part came to the point. Here we have to explore many related web based application, which already served to the people. We have to find unique part, which make us different from others and then, implement all plan and execute them fully by frontend and backend technologies.

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2.2 Related Works and Comparative Analysis:

Safar (An Online Tour Management Portal)	Airbnb	GoZayan	Tripadvisor
Find Best Guide (Employment for guide)	No	No	No
Tour Organization	Yes	No	No
Campaign	Yes	No	Yes
Live Chat	No	No	No

2.3 Scope of the Problem & Challenges:

The people, who can survive with digitalization and the other hand, who didn't know this advanced culture, will help both of them to get services as well. They can easily handle the platform and also interact in the needed places. On the other hand, our network connections is very buffering. An online survey of all over the world, Bangladesh ranked 135 position out of 137 countries. So data rendering or many more system may be increase or user would be face a bad experience.

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CHAPTER 3

Requirement & Specification

3.1 Business Process Modeling:

Business process model shows a graphical reflection of this application.

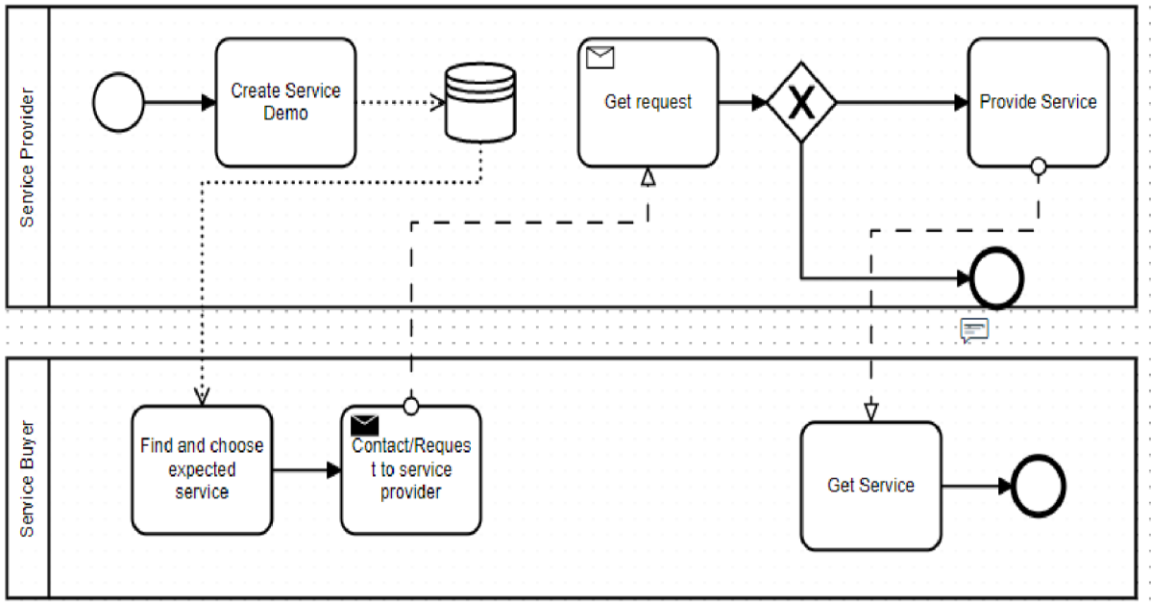

Figure 3.1: Business Process Model

In the workflow of this diagram, service giver make a demo which is stored in database. Then buyer will choose their desired places from database. They can send request, and serve their selected services. By get a request from their consumers, service giver will provide the service or can deny. After all end up the process.

3.2 Requirement Collection & Analysis:

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Many needed information, which is important for finding similarity of others project and ours, found many information and also know about analyzing. Those are given inside_

- Arranging a team to support me for plan.
- For explore many applications, such as_ GoZayan, Airbnb, Tripadvisor and many more.
- Try to find out our countries peoples general demands.

From a huge of thinking, I decided to cut the whole part into two. One is functional and another is non-funtional.

3.2.1 Functional Requirements:

This requirement is represents the things, that shows important event of this project have had owned the application.

- A normal consumer can select an option of three. Roles as a service seller or buyer.

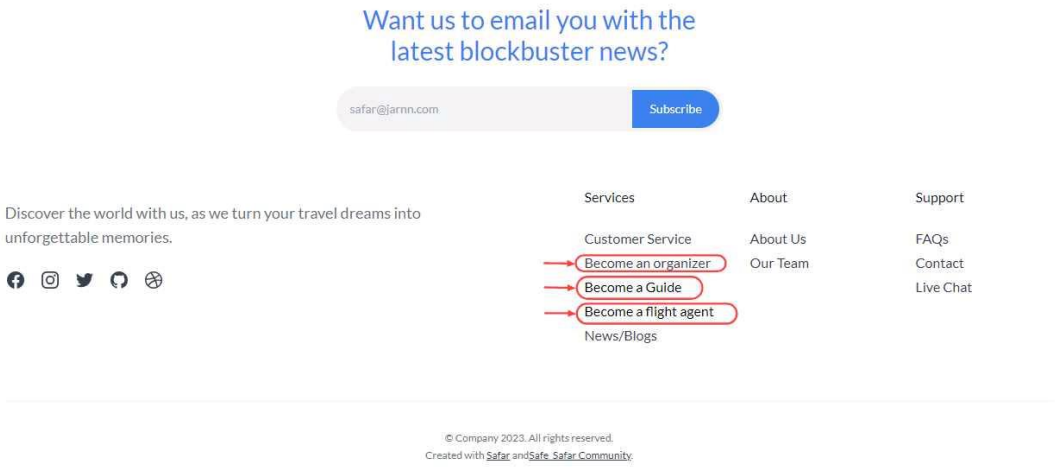

Figure 3.2: Role Selection

- Only for direct package recipient user from this platform authority, they can register here for booking.

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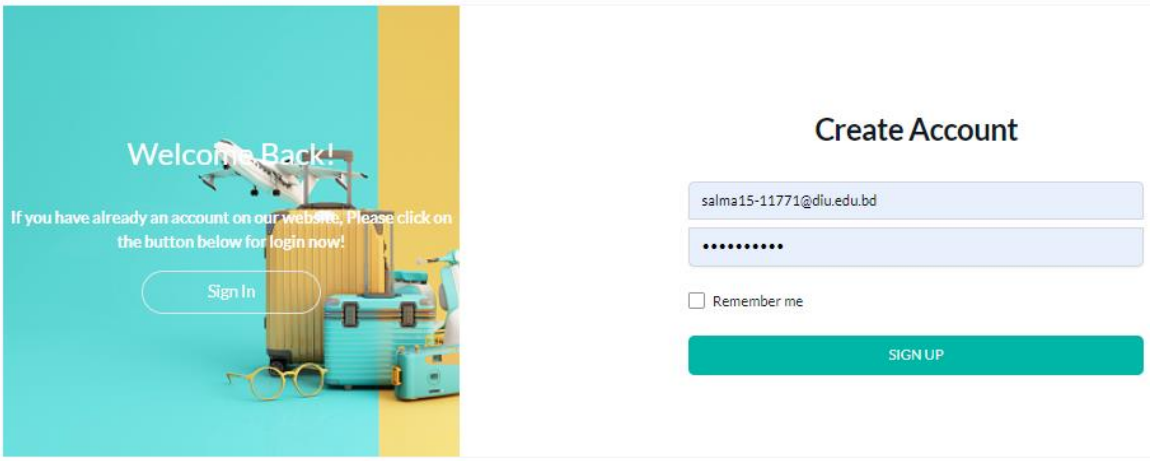

Figure 3.3: Sign Up Page

- Organizers must need to register for post and provide their multiple services.

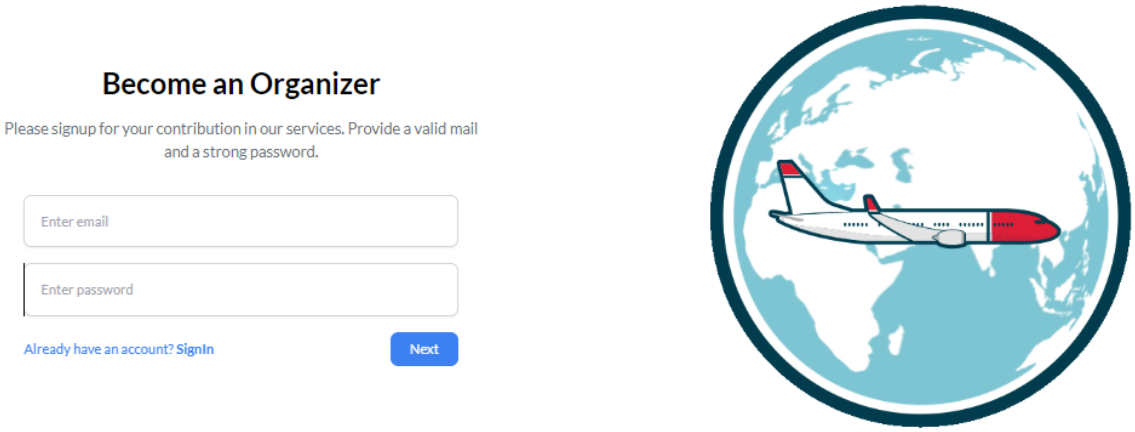

Figure 3.4: Organizer Register

- Guides has to register also to create their profile for provide guiding services to tourists.

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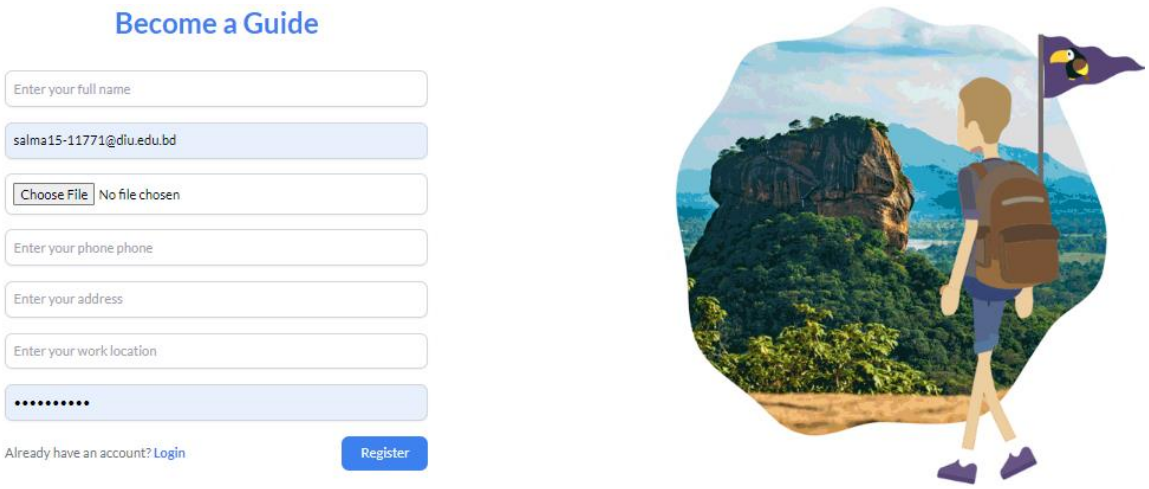

Figure 3.5: Guide Register

3.2.2 Non-Functional Requirements:

All of the part of this application is important, but this part is more important and secured. So that, must need to maintain authentication.

These requirements are given below.

- Security of this system represent the health of this platform.
- Rendering time or loading time should be a little.
- Must be user friendly.
- User page must have accessible all time.

3.3 Use Case Modeling & Description:

For this time, presenting how many types of consumers react with this platform & that's nature.

A diagram of the basic part of a project use case diagram is given below_

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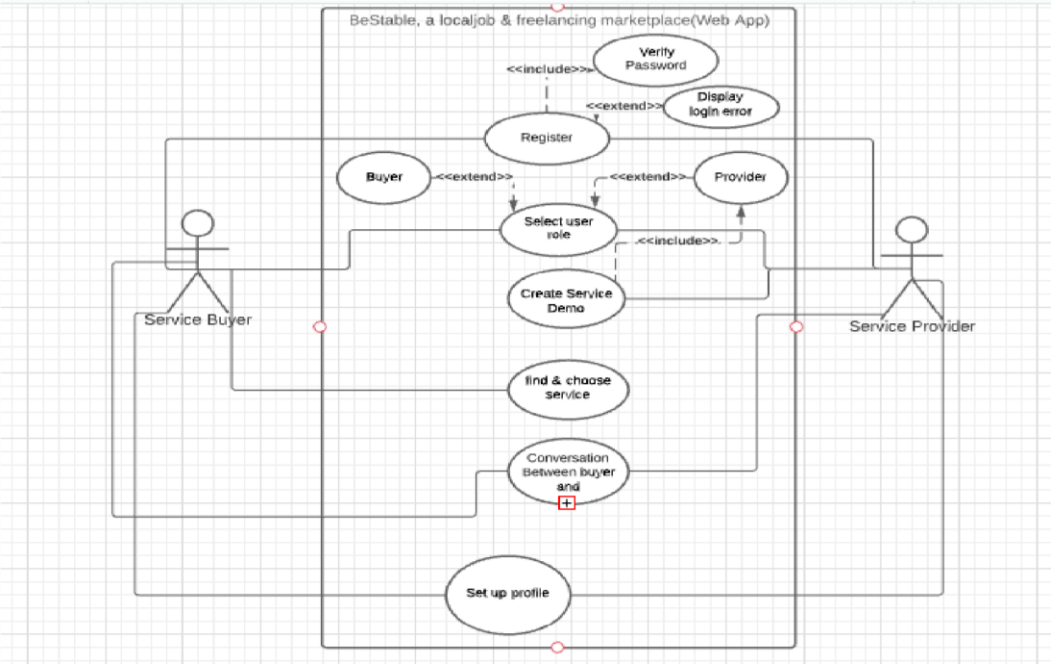

Figure 3.6: Use Case Diagram

From this model of Figure 3.6, there are 2 kinds of consumers. One is service Consumer and another is service Seller. Both types of consumers must need to register and verify their account to interact as their indicated role.

Here, organizer or guide can provide services by register and create their account or their own service demo. So that, only organizer and authority can create post or create services and consumers can choose and select their desired places or demands.

3.4 Logical Data Model:

Now, here I have tried to explain this projects basic needed informal information for better understanding of this system.
Diagram is showed here_

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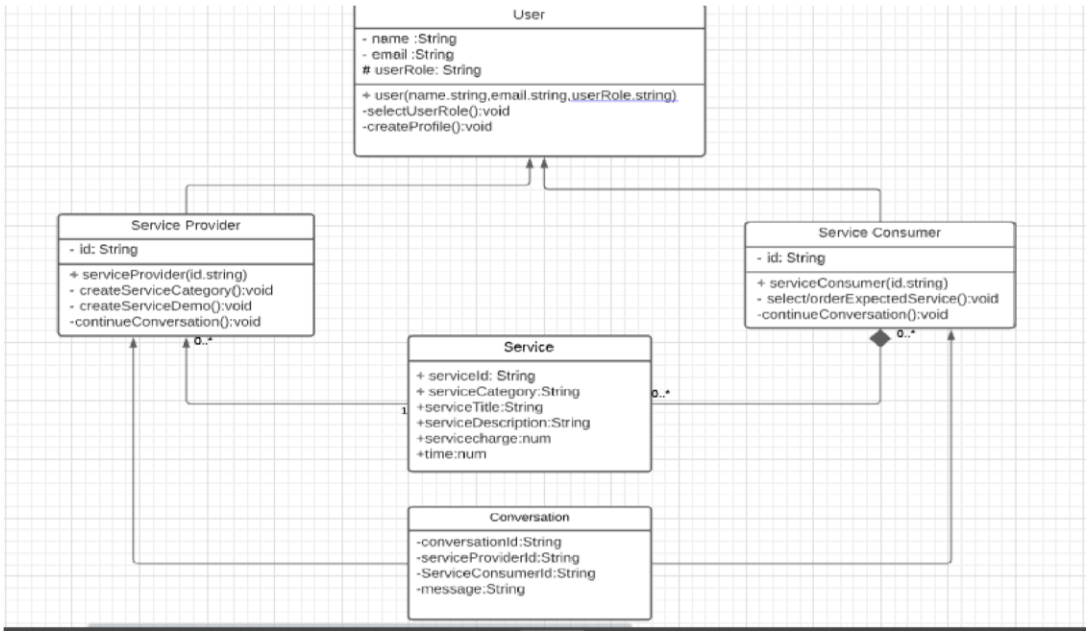

Figure 3.7: Class Diagram/Data Model

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CHAPTER 4

Design Specification

4.1 Front-end Design:

The frontend of this dynamic platform, where all are able to visit and also react with this platforms frontend design.

In this project_ implementation of this dynamic design of this web application, React.JS library and many more advanced dynamic components are used to make it more efficient and flexible. In some exceptional cases different types of css components are used here to design the front-end.

At a glance, most technologies used in this project frontend is-

- ReactJS
- Redux
- Context API
- ExpressJS
- Socket.io
- Firebase

React.JS is the easiest and developer friendly, also comfortable to develop user interfaces. This have two component based on own nature. I used functional components for this purpose and used functional components in most cases.

Useful and important many of frontend parts are given below_

This is our landing page banner, where user can interact with “International Flights” & “Find your guide” button and a search bar.

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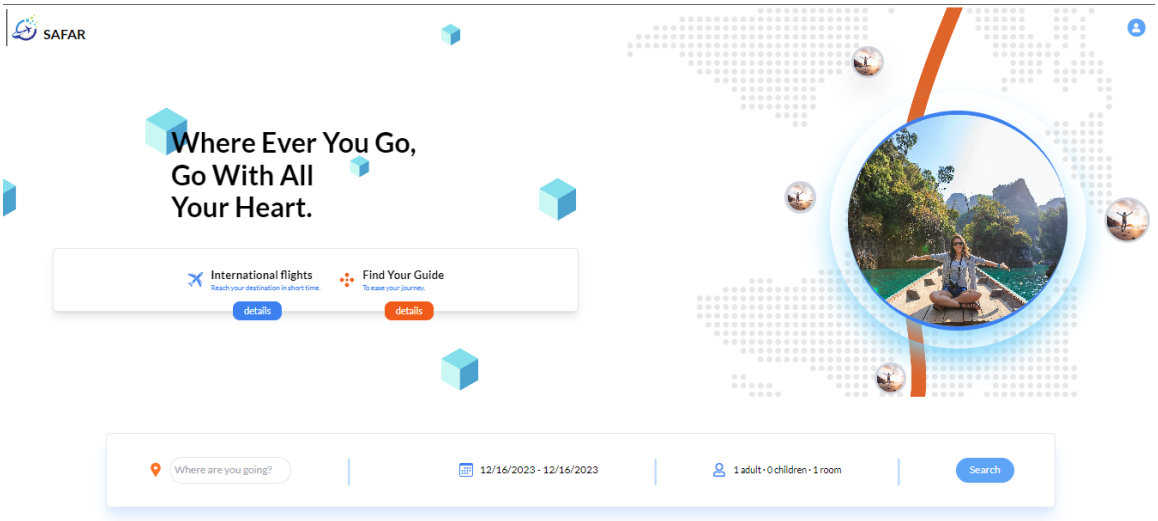

Figure 4.1: Landing Page

This is offer section all of events which may provide by authority or any organizer will be showed here.

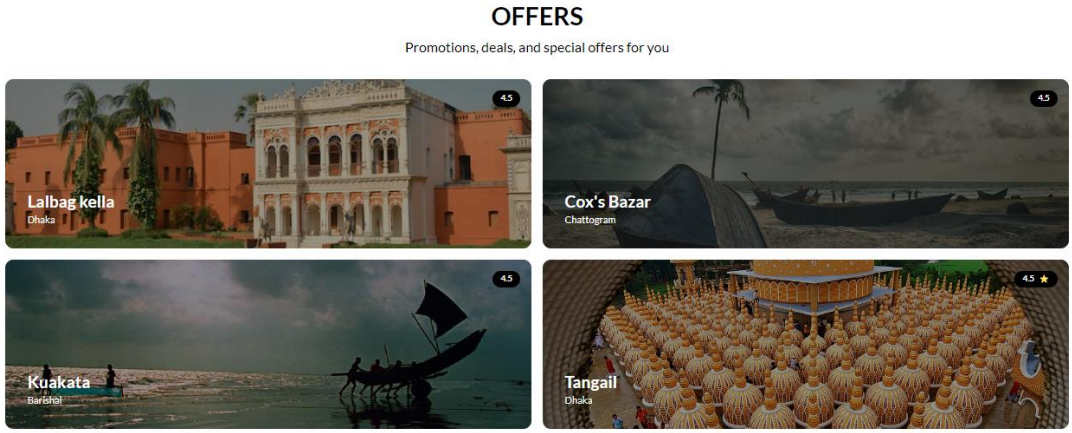

Figure 4.2: Landing Page Offer Section

Special destination section indicates for most visiting tourist places and might have offer also.

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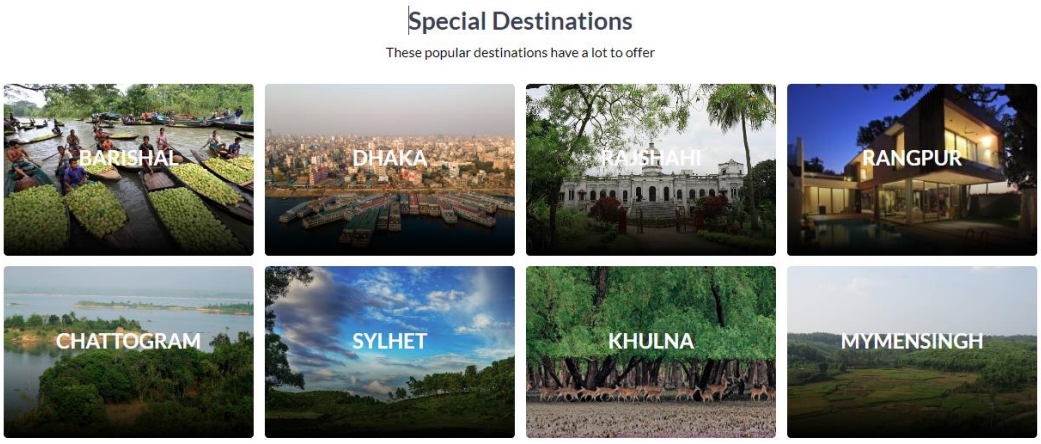

Figure 4.3: Landing Page Special Destination Section

This is top selling part, user can choose their desired places by visiting top visited/selling places.

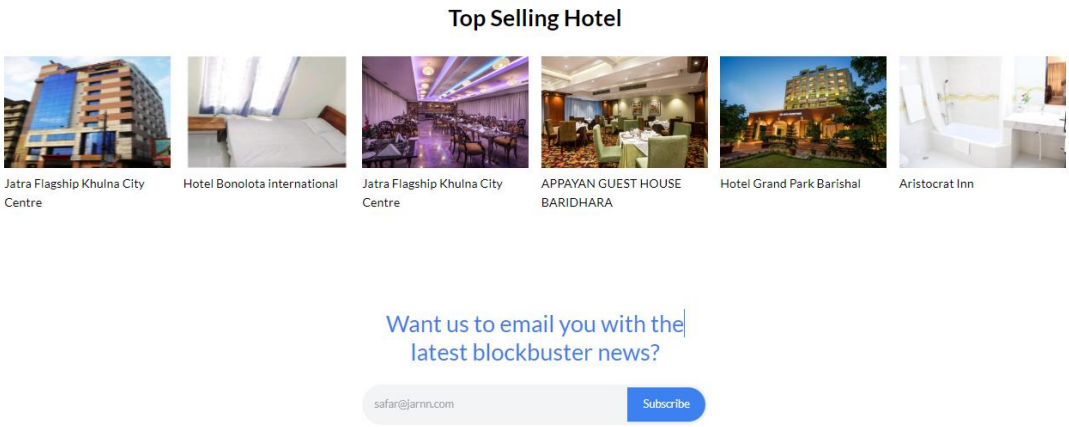

Figure 4.4: Landing Page Top Selling Hotel Section

This is a simple footer section. Organizers, Guides, and flight agents can register from the “Services” category. Anyone can learn more about authority, services, teams, and also contact with authority.

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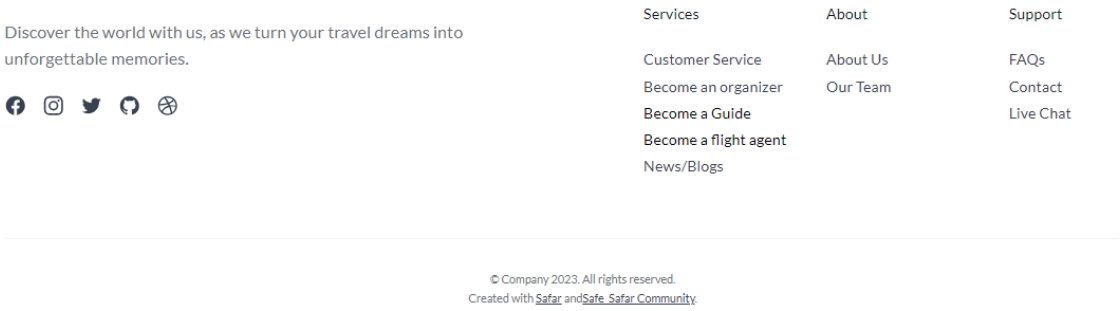

Figure 4.5: Footer

This is search result from user's interaction for chosen places and hotels for booking

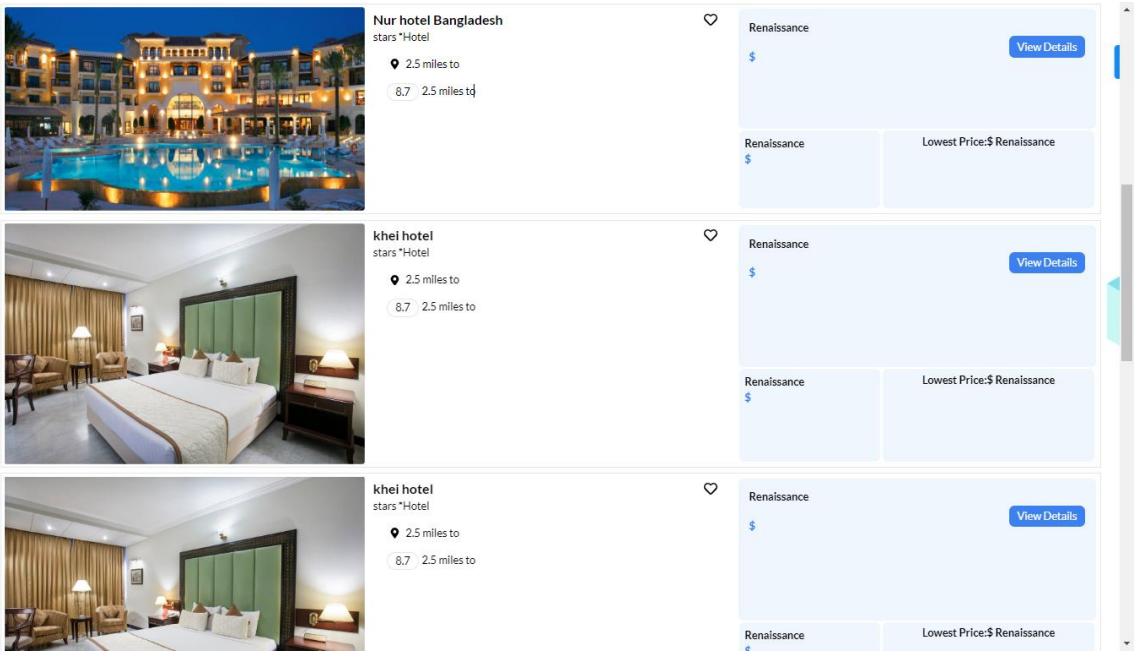

Figure 4.6: Tourists Search Result

User can see all photos of provided services from their chosen /hotel room

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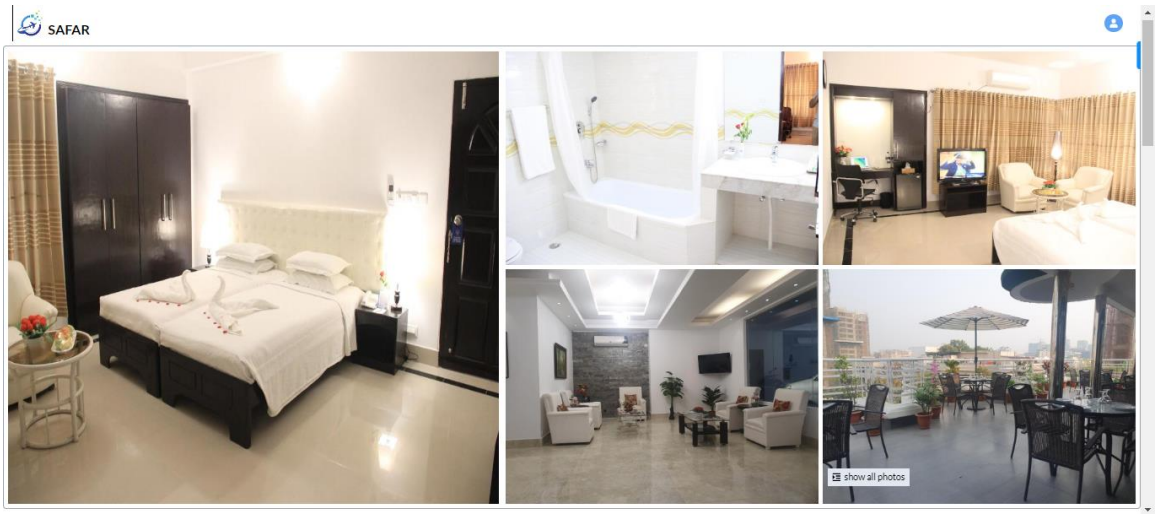

Figure 4.7: Details & Booking page

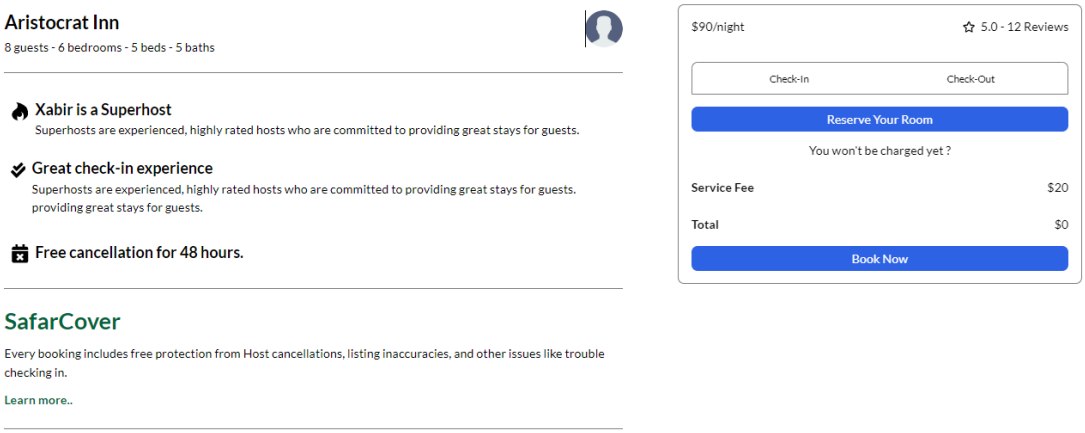

Figure 4.8: Details & Booking page

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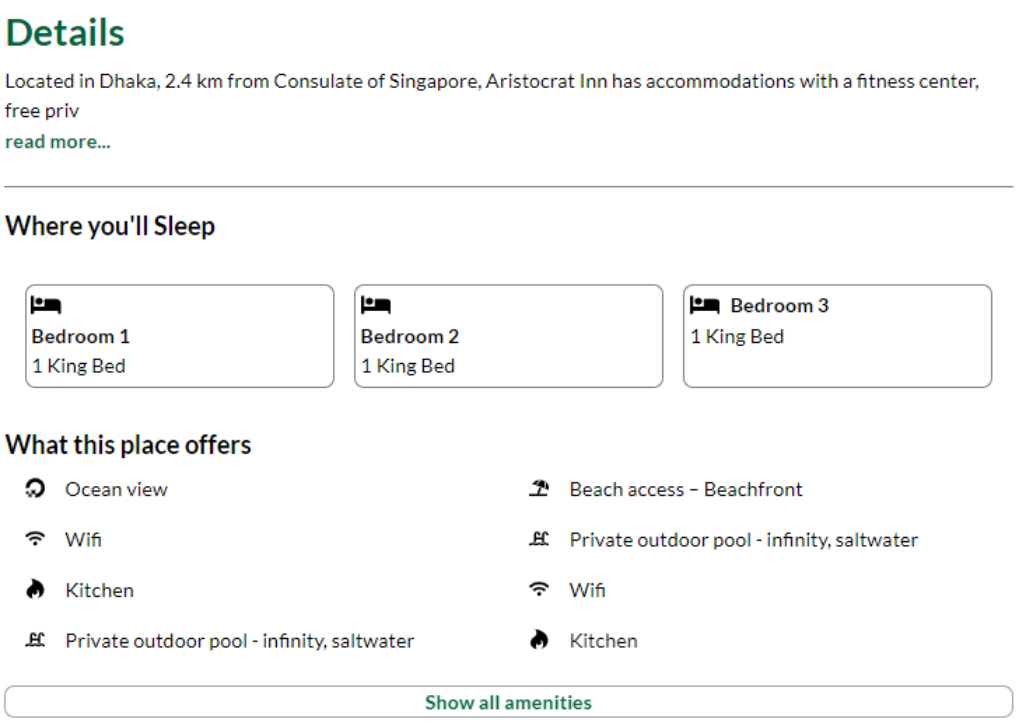

Figure 4.9: Details & Booking page

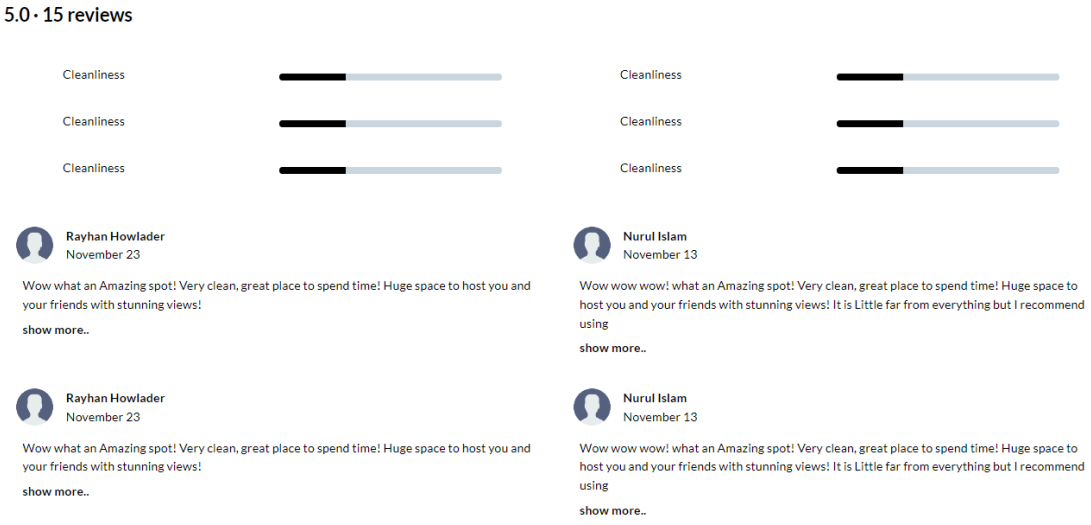

Figure 4.10: Details & Booking page

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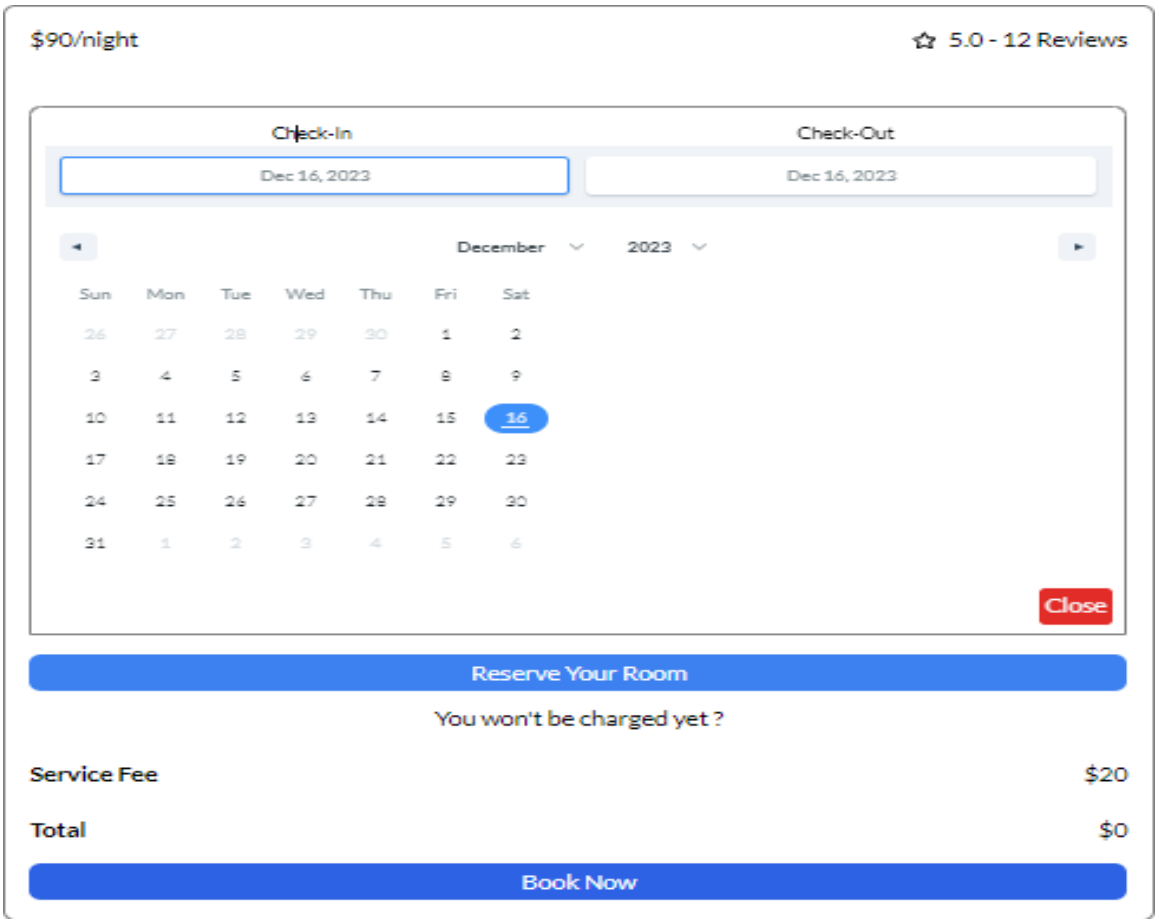

Figure 4.11: Check In / Check Out Date Selection

Room and bed selection, user can extend bed and specific services

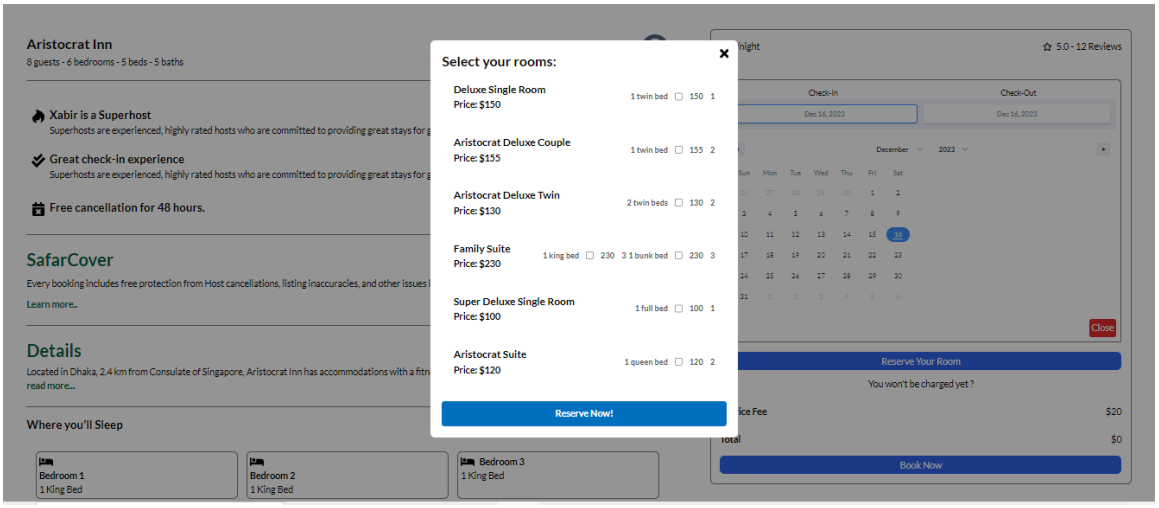

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Figure 4.12: Room Selection

Payment method implemented by stripe.

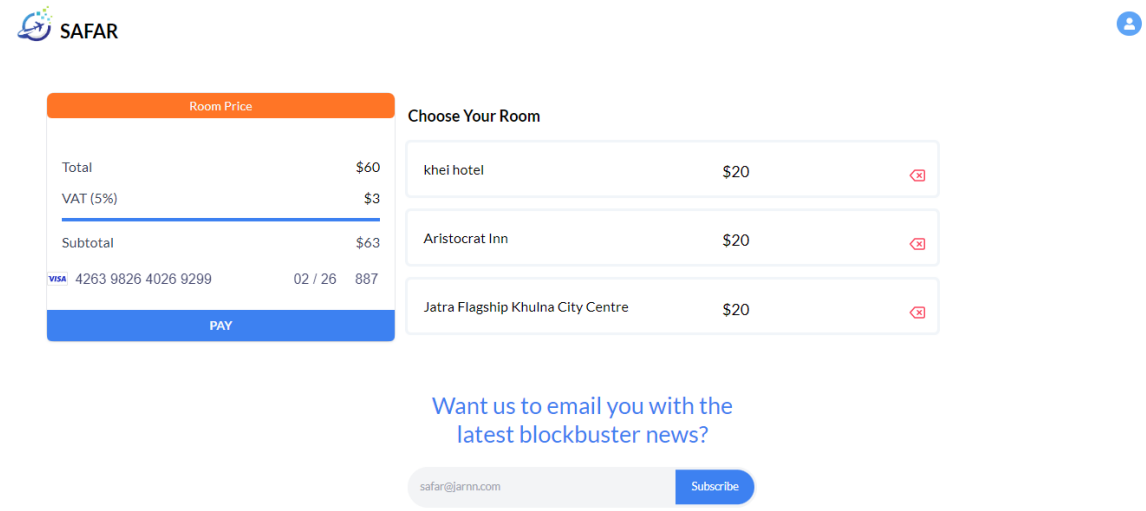

Figure 4.13: Payment Details

This is search guide page, where tourist can search and select guides

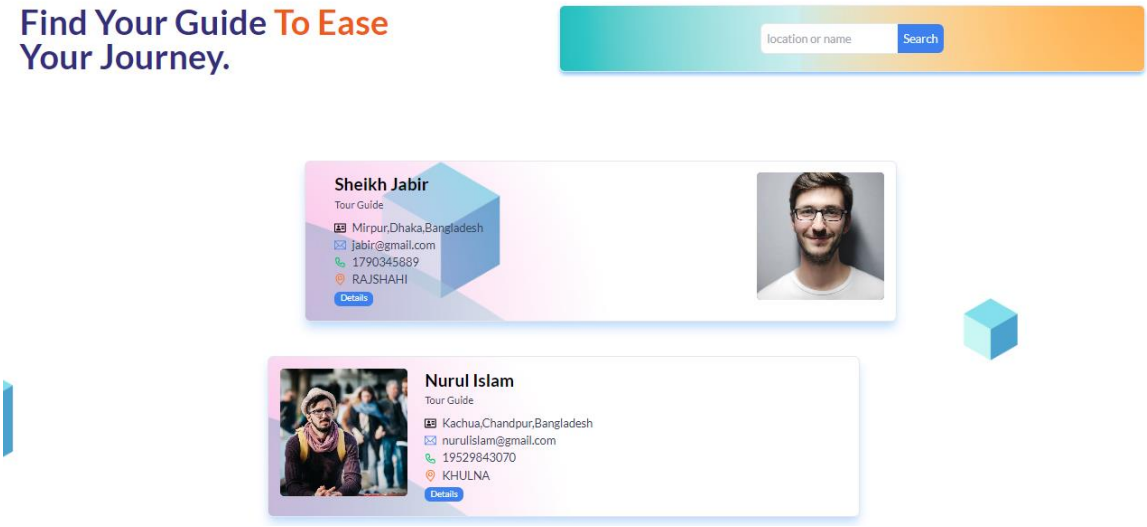

Figure 4.14: Find/Search Guide

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And its guide detail page

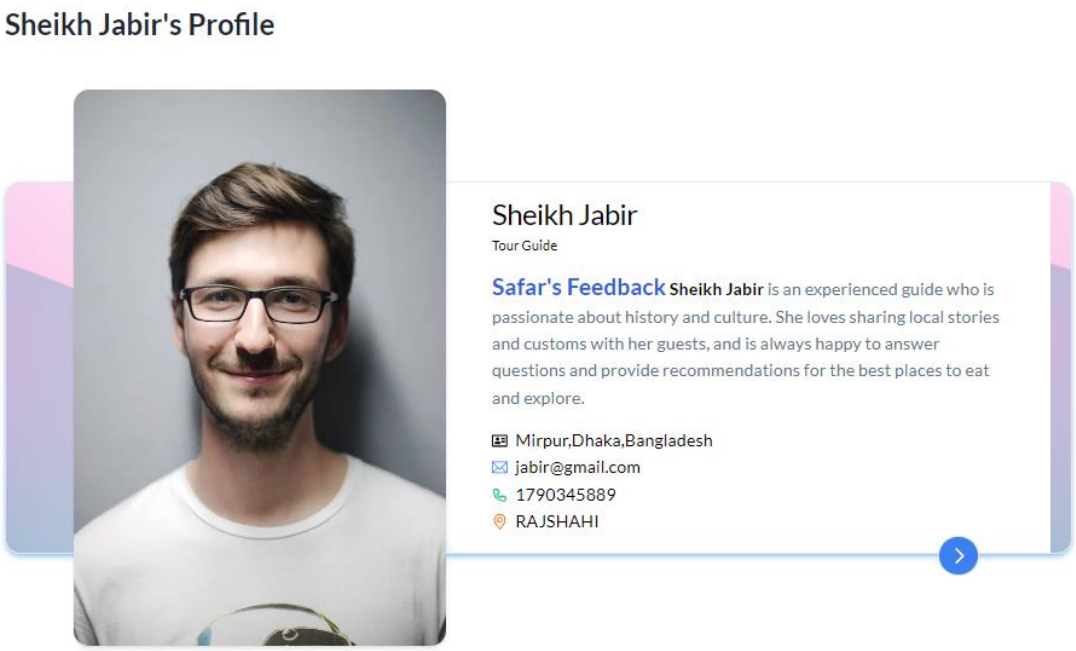

Figure 4.15: Guide Details

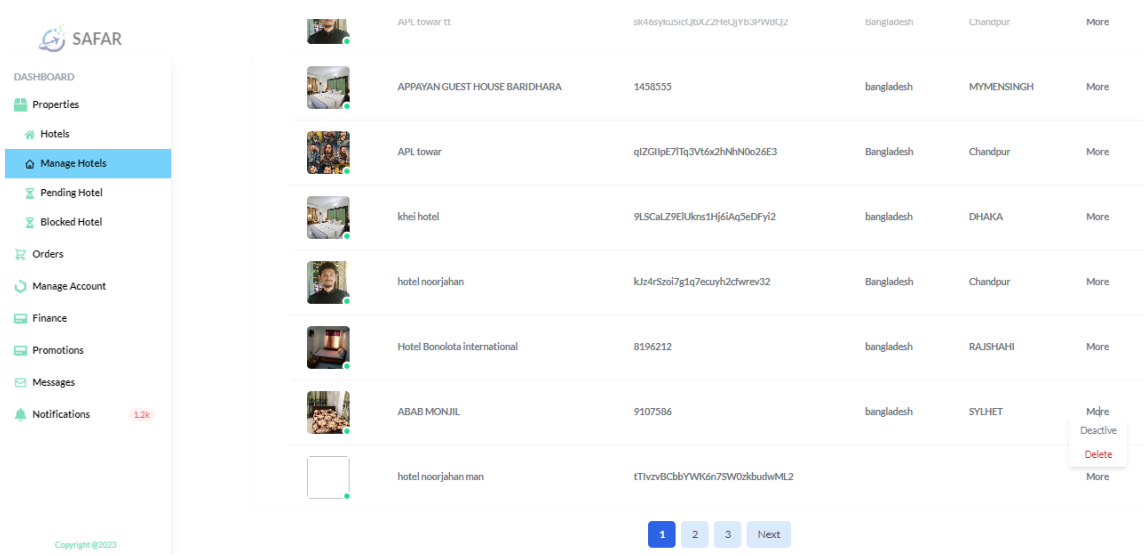

Figure 4.16: All Hotels and Management

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This is all orders page from dashboard, will maintained by admin

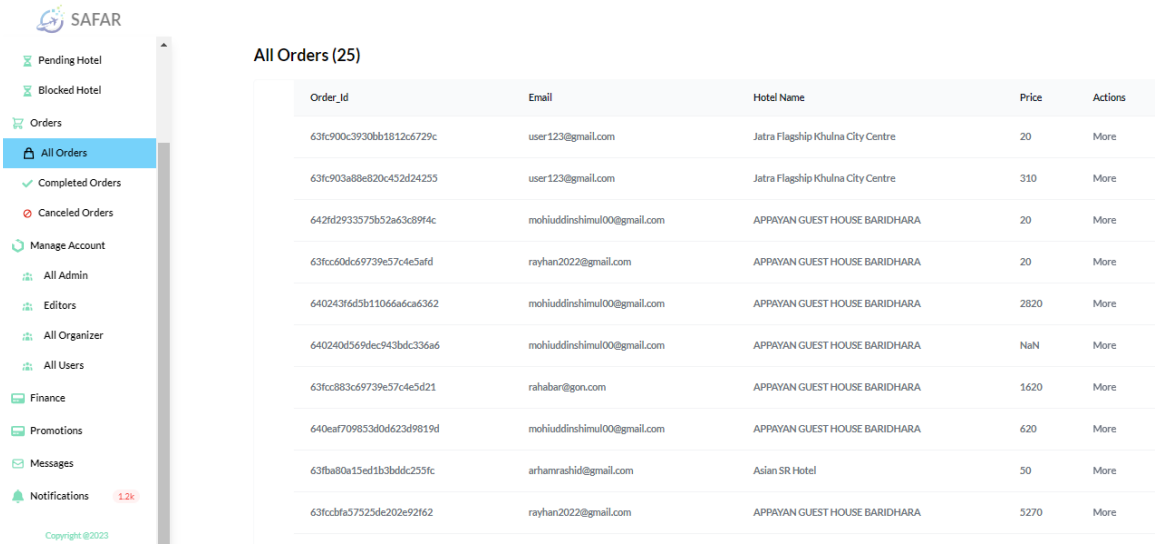

Figure 4.17: All Order List in Dashboard

All requested organizers, which would like to create a new campaign

Figure 4.18: Register Activity for Organizers

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Users account settings, where user can update their profile and see their all activity.

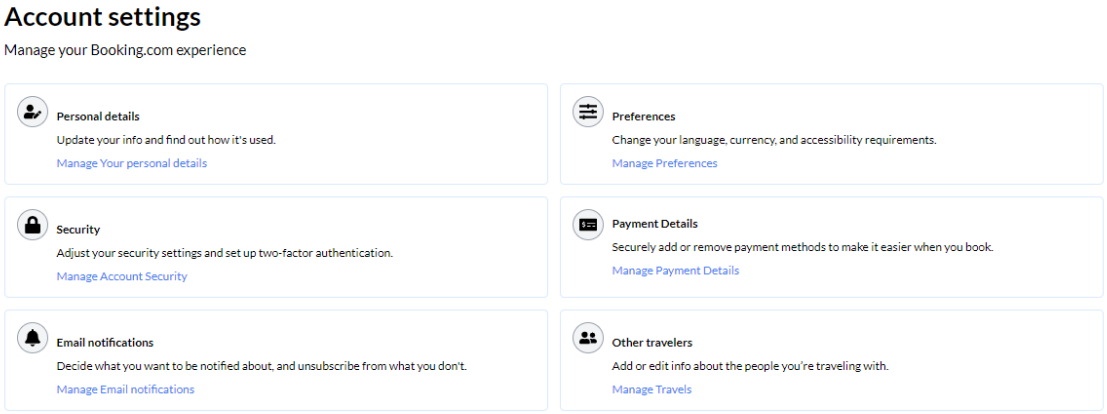

Figure 4.19: Account Settings

Edit & update personal information

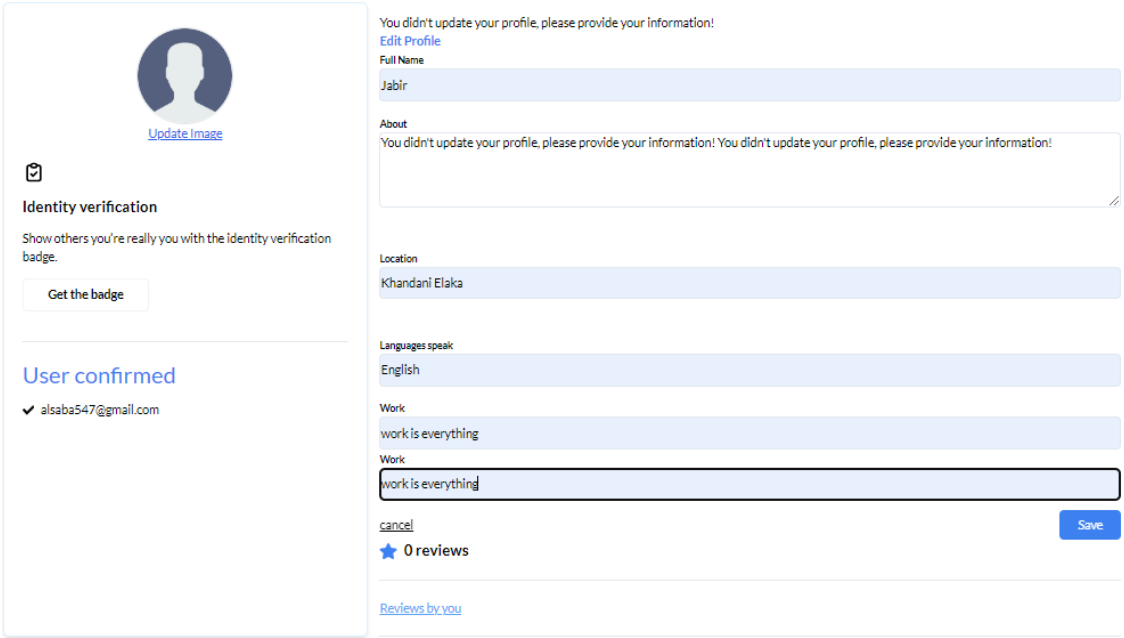

Figure 4.20: Edit Profile

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4.2 Back-end Design:

This project, most advanced back-end technologies are used to make it smooth for users.

Technologies are_

- ExpressJS
- NodeJS

To be used to with MERN stack, I've implemented Node.JS to design back-end. It is a cross platform, JavaScript runtime environment, which runs on v8 engine. And I've also used Express.JS framework of Node.JS. To making API and effective backend development is easy and user friendly with Express.JS. Also Routing and maintaining is easy with it.

Also used Firebase for login and registration authorization.

4.3 Interaction Design and User Experience:

The User Interface/User Experience is major for frontend implementation.

It usually shows, interaction of users with this interface, how the application work in use, How it looking for in different kinds of breakpoints, called responsive. For that case, I've used Tailwind CSS. And implemented many react packages. UI design is simpler and easier with 'tailwind' also user friendly to make it attractive to look.

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CHAPTER 5

Implementation & Testing

5.1 Implementation of Database:

To implement this part I have used MongoDB which is a document-oriented database program. It uses JSON format with optional models/schemas. It is a NoSQL database program. In SQL database we use table format but in NoSQL, as the data is represented in a JSON (JavaScript Object Notation) format, models are used here.

Below I am giving the model/schema of the user I prepared to implement the database for ease of better understanding.

```
const userSchema = new mongoose.Schema({
  email: {
    type: String,
    unique: true,
    required: true,
  },
  name: {
    type: String,
  },
  address: {
    type: String,
  },
  mobile: {
    type: String,
  },
  age: {
    type: Number,
  },
  gander: {
    type: String,
  },
  about: {
    type: String,
  },
  location: {
    type: String,
  },
  work: {
    type: String,
  },
```

Figure 5.1: User Schema

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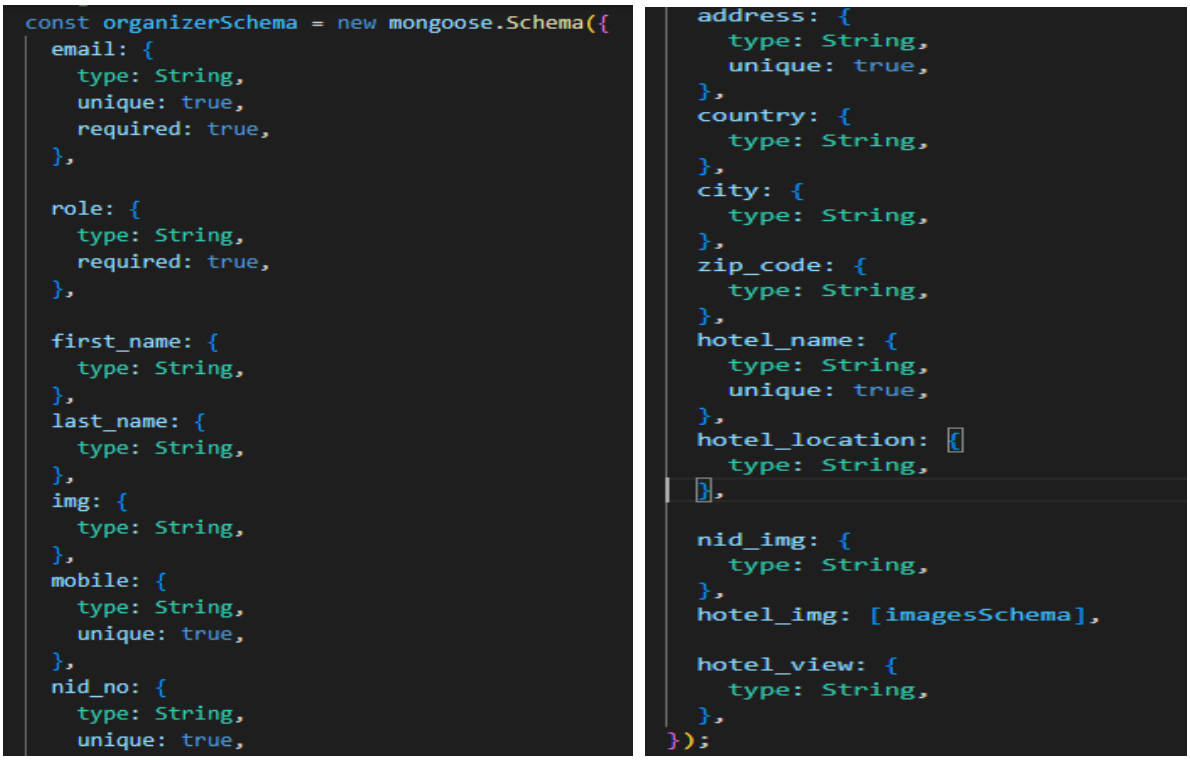
Here it is sample code (database) of organizerSchema.



```
const organizerSchema = new mongoose.Schema({
  email: {
    type: String,
    unique: true,
    required: true,
  },

  role: {
    type: String,
    required: true,
  },

  first_name: {
    type: String,
  },
  last_name: {
    type: String,
  },
  img: {
    type: String,
  },
  mobile: {
    type: String,
    unique: true,
  },
  nid_no: {
    type: String,
    unique: true,
  address: {
    type: String,
    unique: true,
  },
  country: {
    type: String,
  },
  city: {
    type: String,
  },
  zip_code: {
    type: String,
  },
  hotel_name: {
    type: String,
    unique: true,
  },
  hotel_location: {
    type: String,
  },

  nid_img: {
    type: String,
  },
  hotel_img: [imagesSchema],

  hotel_view: {
    type: String,
  },
});
```

Figure 5.2: Organizer Schema

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This is sample json data format of destinations, which is required for organizers to register

Figure 5.3: JSON Data format for Destination

5.2 Front-end Design Implementation:

First of all, I've started frontend design with react.js library of JavaScript. And for that, I needed to explore many more technologies and implement different kinds of npm packages for advanced and user friendly interfaces. Using react.js in this project, user interface turn into an attractive an effective to use. Using HTML is bitter possibility for me to represent such a user friendly interface. By react.js and its many more packages, it has been easier to develop and represent properly.

5.3 Testing Implementation & Results:

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An application must need to test the code for better performance and vulnerable. For this case, we need to test our codes performance and to be good health of the code, testing is needed. Testing can managed by different ways.
Such as

- Testing of black box
- Testing of white box
- Testing of grey box

Testing of white box is maintained by a vendor authority. For this reason, they can be normal consumer and tester too.
For not launching my project, I've designed testing way of Black Box. This part is also developed by developer and helping hand of this application.
Every component must need to simplify for this case of testing. Because, every line of code is important as same.
When, one can implement testing, must need to focus on some basic topic. What is the final result, what the error is and what kinds of bugs will be fix on the further update or bug fixing session.
I used the "Thunder Client" technologies of VS Code to check the response status of API.

The basic result of my basic unit test of this application_

Functions	Description	Status
The process of register	From three types of roles, one role must need to select and registration to that role is important to interact.	**Passed**

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Authentication	For all type of user of this platform need to authenticate user by register and log in.	**Passed**
Response of server	With the response of server, user and authority can message with each other.	**Passed**
Secured way	By this secured way, user has to authorized first and act for next step.	**Passed**
UI	UI will be act perfectly, responsively & can load data perfectly.	Passed by- 95%

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CHAPTER 6

Impact on Society, Economy & Sustainability

6.1 Impact On Society:

With this platform, Society can realize the great impact and can be benefitted with this also. They will be benefitted by two unique features. Guides can make their profile ranked providing the best guide services and this is a huge opportunity to earn. Organizers can manage an event and also can make a believable marketplace by selling hotel rooms or many continental services for tourists. These can be self-reliant. For these kinds of employment opportunities, service buyers also benefitted and no need to hassle for finding places, hotels and guides. So, this platform will bring opportunity to the tourist's hand.

6.2 Impact on Economy:

This is a graph of Bangladesh jobless people from 1999 to 2019. From this image, everybody can realize the fact that, a huge amount of people are still jobless in this country. So, this platform can increase a little from this unemployment with beneficial opportunities.

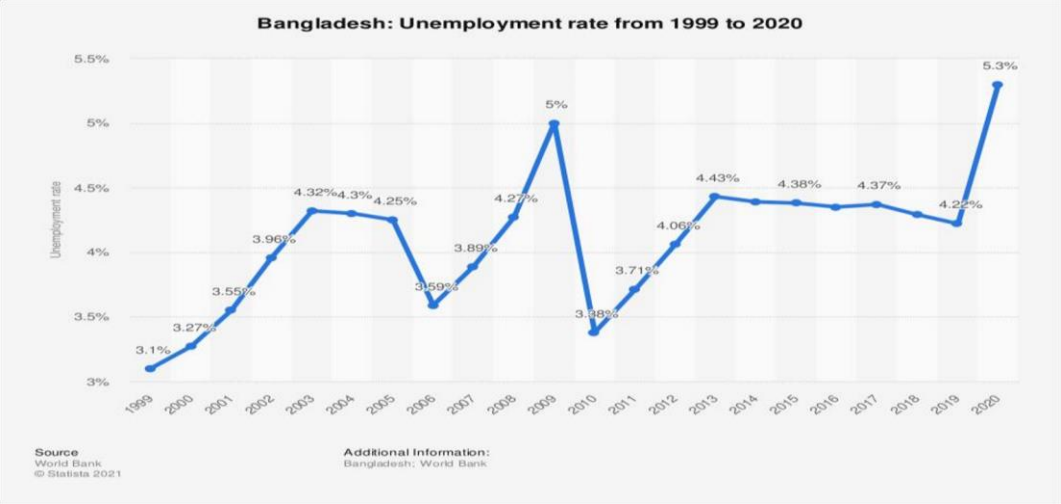

Figure 6.1

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6.3 Sustainability Plan:

For the long term stability to keep the marketplace in our hand, we've taken many step to compete with our beneficial activities. And for that, we've taken some initiative to sustain. This sustainability can be perfect this platform.

From these_

- Environment
- Society
- Economy

In this case, environmental discussion will be added briefly and when will be launched this project, there will be a part to analysis. After that, we will be open an online unpaid session for the interested people about hospitality and tour management. So, they can built their skills from here, and making earnings will be easy for them. So that, our plans may have caught a major place from the market with these valuable initiatives and a large number of people will be encourage in this profession. And those people, who are interested in this profession, will get an opportunity to growth their skills.

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CHAPTER 7

Conclusion & Future Scope

7.1 Conclusion:

Most recent analysis of this platform about providing and consuming tourists care as their needs. Who expect to get earnings by served guidance or organizing cares can register as a “Guide” or “Organizer”. This project has been designed thinking about better user experience. Our important user advantage is the Guide. Users can hire a guide for any tourist zone by visiting their profile, ranking, and reviews. That will help you to select a guide along the way. There will have been all of the processes of going to the tourist zone like the selection of place, transportation (car, plane), hotel booking, user guide, etc. You can choose anyone you want.

Single tourists can collaborate with any tour organizers on live chat, that's all will be created by individual users.

7.2 Future Scope:

I’ve planned for many more advanced and useful features for this platform’s services. It is just focusing on the best online tour management services. Cause of so much need in Bangladesh. User can use other kinds of services for online, but without hassle, there is not much scope established yet. This project will be updated soon with a pleasant feature, which is about skill growing up training/course about hospitality and tour management. For that, user can be skilled from this platform and can earn by burning it. And by this initiative, a great amount of people will be got benefitted and also a large number of people will be encourage in this profession. And those people, who are interested in this profession, will get an opportunity to growth their skills.

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